

Image 1631

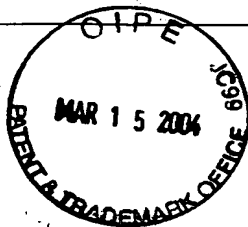
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Selifonov et al

Application No.: 09/539,486

Filed: March 30, 2000

Title: METHOD FOR MAKING CHARACTER
STRINGS, POLYNUCLEOTIDES AND
POLYPEPTIDES HAVING DESIRED
CHARACTERISTICS



Attorney Docket No.:
MXGNP001X2/0124.510

Examiner: Zhou, Shubo

Group: 1631

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 12, 2004.

Signed: _____

Leslie Russell

**INFORMATION DISCLOSURE STATEMENT
37 CFR §§1.56 AND 1.97(b)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

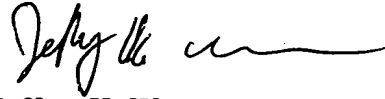
The references listed in the attached PTO Form 1449 may be material to examination of the above-identified patent application. Applicants submit the list of these references in compliance with their duty of disclosure pursuant to 37 CFR §§1.56 and 1.97. The Examiner is requested to make these references of official record in this application. The above-identified application is a continuation in part of prior application U.S. Patent Application No. 09/494,282. This prior application is being relied upon for an earlier filing date under 35 U.S.C. § 120. Because the listed references were either cited by the PTO, or submitted to the PTO in the prior application, under 37 CFR § 1.98(d) Applicants submit that copies need not be provided.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

This Information Disclosure Statement is: (i) filed within three (3) months of the filing date of the above-referenced application, (ii) believed to be filed before the mailing date of a first Office Action on the merits, or (iii) believed to be filed before the mailing of a first Office

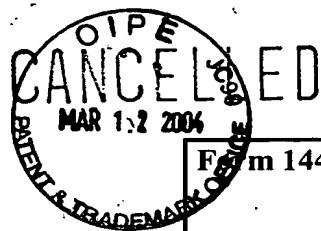
Action after the filing of a Request for Continued Examination under §1.114. Accordingly, it is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 500388 (Order No. MXGNP001X2).

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP

A handwritten signature in black ink, appearing to read 'Jeffrey K. Weaver', followed by a horizontal flourish.

Jeffrey K. Weaver
Registration No. 31,314

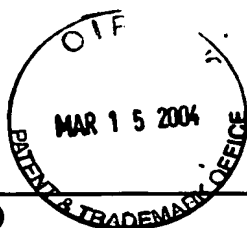
P.O. Box 778
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Form 1449 (Modified)	Atty Docket No. MXGNP001X2/0124.510	Application No.: 09/539,486
Information Disclosure Statement By Applicant	Applicant: Selifonov et al.	Group 1651
(Use Several Sheets if Necessary)	Filing Date March 30, 2000	

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	C1	Hellberg et al., "The Prediction of Bradykinin Potentiating Potency of Pentapeptides. An Example of a Peptide Quantitative Structure-Activity Relationship," <i>Acta Chemica Scandinavica B</i> 40, pp. 135-140, 1988
	C2	Bucht et al., "Optimising the Signal Peptide for Glycosyl Phosphatidylinositol Modification of Human Acetylcholinesterase Using Mutational Analysis and Peptide-Quantitative Structure-Activity Relationships," <i>Biochimica et Biophysica Acta</i> 1431, pp. 471-482, 1999
	C3	Sandberg et al., "Engineering Multiple Properties of a Protein by Combinatorial Mutagenesis," <i>Proc. Natl. Acad. Sci. USA</i> , Vol. 90, pp. 8367-8371, September 1993
	C4	Wrede et al., "Peptide Design Aided by Neural Networks: Biological Activity of Artificial Signal Peptidase I Cleavage Sites," <i>Biochemistry</i> , 37, pp. 3588-3593, 1998
	C5	Jill Damborsky, "Quantitative Structure-Function and Structure-Stability Relationships of Purposely Modified Proteins," <i>Protein Engineering</i> , Vol. 11, no. 1, pp. 21-30, 1998
	C6	Hellberg, et al., "Peptide Quantitative Structure-Activity Relationships, a Multivariate Approach," <i>J. Med Chem</i> , 30: pp 1126-1195, 1987
	C7	Sandberg et al., "New Chemical Descriptors Relevant for the Design of Biologically Active Peptides. A Multivariate Characterization of 87 Amino Acids," <i>J. Med Chem.</i> , 41, pp. 2481-2491, 1998
	C8	Casari et al., "A Method to Predict Functional Residues in Proteins," <i>Nat. Struct Biol.</i> , 2, pp. 171-178, 1995
	C9	Suzuki et al., "A Method for Detecting Positive Selection at Single Amino Acid Sites," <i>Mol. Biol. Evol.</i> 16 (10): pp. 1315-1328, 1999
	C10	Benner et al., "Amino Acid Substitution During Functionally Constrained Divergent Evolution of Protein Sequences," <i>Protein Engineering</i> , Vol. 7, No. 11, pp. 1323-1332, 1994



Form 1449 (Modified)

**Information Disclosure
Statement By Applicant**

(Use Several Sheets if Necessary)

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Applicant:

Selifonov et al.

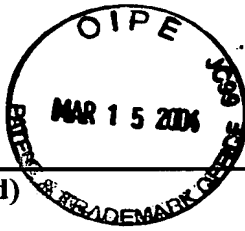
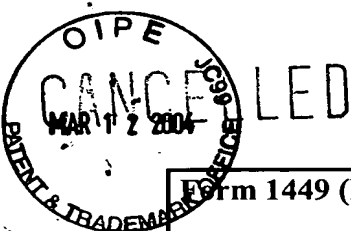
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1651

C11	Wu et al., "Discovering Empirically Conserved Amino Acid Substitution Groups in Databases of Protein Families," Proc. Int. Conf. Intell. Syst. Mol. Biol., 4, pp. 230-240, 1996
C12	Adenot et al., "Peptides Quantitative Structure-Function Relationships: An Automated Mutation Strategy to Design Peptides and Pseudopeptides from Substitution Matrices," Journal of Molecular Graphics and Modelling, 17, pp. 292-309, 1999
C13	Norinder et al., "A Quantitative Structure-Activity Relationship Study of Some Substance P-Related Peptides," J. Peptide Res., 49, pp. 155-162, 1997
C14	Sandberg, "Deciphering Sequence Data a Multivariate Approach," Ph.D Thesis, Umea: Umea University, 78 pages, 1997
C15	Eriksson et al., "Peptide QSAR on Substance P Analogues, Enkephalins and Bradykinins Containing L-and D-Amino Acids," Acta Chemica Scandinavica, 44, pp. 50-56, 1990
C16	Ufkes et al., "Further Studies on the Structure-Activity Relationships of Bradykinin-Potentiating Peptides," European Journal of Pharmacology, 79, pp. 155-158, 1982
C17	Dobrynin et al., "Synthesis of Model Promoter for Gene Expression in Escherichia Coli," Symposium Series No. 7, pp. 365-376, 1980
C18	Skinner et al., "Potential Use of Additivity of Mutational Effects in Simplifying Protein Engineering," Proc. Natl. Acad. Sci., Vol. 93, pp. 10753-10757, 1996
C19	Lathrop et al., "Global Optimum Protein Threading with Gapped Alignment and Empirical Pair Score Functions," J. Mol. Biol., 255, pp. 641-665, 1996
C20	Hellberg et al., "A Multivariate Approach to QSAR," Ph.D. Thesis, Umea, Sweden: University of Umea: 1986
C21	Nambier et al., "Total Synthesis and Cloning of a Gene Coding for the Ribonuclease S Protein," Science, 223: 1299-1301, 1984
C22	Lin et al., "Functional Expression of Horseradish Peroxidase in E. Coli by Directed Evolution," Biotechnol. Prog, 15: 467-471, 1999
C23	Lathrop R.H., "The Protein Threading Problems with Sequence Amino Acids Interaction Preference is NP-Complete," Protein Eng., 7:1059-1068, 1994
C24	Hanes et al., "In Vitro Selection and Evolution of Functional Proteins by Using Ribosomes Display," Proc. Natl. Acad. Sci. USA, 94: 4937-4942, 1997
C25	Wells et al., "Rapid Evolution of Peptide and Protein Binding Properties <i>in vitro</i> ," Curr Opin Biotechnol, 3:355-362, 1992



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	C26	Johnson et al., "The Traveling Salesman Problem: A Case Study in Local Optimization," In Local Search in Combinatorial Optimization, Edited by Aarts et al., John Wiley & Sons Ltd., 21-310, 1997
	C27	Geladi et al., "Partial Least Squares Regression: A Tutorial," Anal Chim Acta, 168: 1-17, 1986
	C28	Holowachuk et al., "Efficient Gene Synthesis by Klenow Assembly/Extension-Pfu Polymerase Amplification (KAPPA) of Overlapping Oligonucleotides," PCR Methods Appl, 4:299-302, 1995
	C29	Aita et al., "Theory of Evolutionary Molecular Engineering Through Simultaneous Accumulation of Advantageous Mutations," J. Theor. Biol., 207:543-556, 2000
		Date Considered

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.